REMARKS

Applicant has carefully reviewed and considered the contents of the Office Action mailed July 22, 2003. Reconsideration is respectfully requested in view of the foregoing amendments and the comments set forth below.

By this Amendment, claim 20 is amended to recite an inherent feature of an actuated pair, which enables an electrode arrangement, according to the invention, inserted into cardiac tissue to divide the cardiac tissue resulting in a better defibrillation device. Accordingly, claims 14-26 are pending in the instant application.

Claims 14 and 19-24 and 26 were rejected under 35 U.S.C. § 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over U.S. Patent No. 5,855,592 to McGee et al. (hereinafter referred to as "McGee") in view of Ljungström (hereinafter referred to as Ljungström) and further in view of U.S. Patent No. 4,726,379 to Altman et al. (hereinafter referred to as "Altman") as explained on pages 2-6 of the Action. In addition, claims 15-18 were rejected under 35 U.S.C. § 103(a) as being unpatentable over McGee in view of U.S. Patent No. 5,834,031 to Cookstone, et al. (hereinafter referred to as "Cookstone") as described in paragraph to of the Action. Claim 25 was rejected under 35 U.S.C. § 103(a) as being unpatentable over McGee in view of U.S. Patent No. 4,664,120 to Hess, or in the alternative under 35 U.S.C. § 103(a) as obvious over McGee in view of Ljungström and further in view of Hess for the reasons set forth in paragraph 3 of the Action. These rejections are respectfully traversed.

The invention is directed to an electrode arrangement for endocardial defibrillation pulses in the atrium or a ventricle of the heart. As shown in Fig. 2b of the

instant application, the dash-dotted lines joining electrodes (30) and (32) of the septal branch (14) to unambiguously associated electrode (30 and 32) of the lateral branch (16) clearly illustrate the layers defined in the atrium by the associated electrode pairs. In order to further clarify the functional structure of each actuated pair recited in independent claim 20, Applicant amends the claimed electrode arrangement to positively recite that "each actuated pair defines a layer spanning from the electrical conductive surface portion of the septal branch to the electrically conductive surface portion of the lateral branch thereby dividing cardiac tissue resulting in a better defibrillation device". As this clause clarifies the functional structure of the actuated pairs of the electrode arrangement, it is submitted that independent claim 20 recites an electrode arrangement where electrodes (electrically conductive surface portions) can be positioned on mutually oppositely disposed sidewalls of the heart and that the electrodes (electrically conductive surface portions) to be actuated, in the bipolar mode, each defines a layer spanning from the electrically conductive surface portion of the septal branch to the electrically conductive surface portion of the lateral branch thereby dividing cardiac tissue resulting in a better defibrillation device. As submitted in the previous Amendments and Appeal Brief, nowhere does McGee disclose, teach or even suggest electrodes of different branches being stimulated simultaneously in pairs to form a stimulation layer through the heart, as claimed by Applicant. McGee is directed to applying pacing signals from different electrodes at different times (column 4, lines 18-19 of McGee). Nowhere does McGee disclose the inventive operation of the unambiguously associated electrodes in a bipolar mode where the unambiguous associations defines a layer in the atrium of the

heart and allows stimulation of the same by discharge of voltage pulses. Consequently, McGee cannot anticipate the claimed invention; nor can McGee render obvious the claimed invention because it is directed to applying pacing signals from different electrodes at different times.

The secondary reference to Ljungstrom is applied for its teaching of two branches of a defibrillation system. Nowhere does Ljungstrom state that each electrode of the septal branch is unambiguously associated in pairs with an electrode of the lateral branch wherein each pair is actuated in such a way that two electrically conductive surfaces portions of a pair serve as an anode and a cathode in the bipolar mode of the operation and define a layer spanning from the electrically conductive surface portion of the septal branch to the electrically conductive surface portion of the lateral branch thereby dividing cardiac tissue or resulting in a better defibrillation device as claimed by Applicant. It is this unambiguous association or pairing of electrodes disposed on different branches that enable the inventive electrode arrangement to achieve a defibrillation effect with an extremely low level of stimulation energy thereby providing a substantially pain-free defibrillation treatment. Nowhere does McGee or Ljungstrom recognize the advantage of unambiguously associating in pairs electrodes on different branches. Thus, both McGee and Ljungstrom taken alone or in combination fail to teach the claimed invention.

The final Office Action adds the teachings of Altman in order to provide a reference that addresses a bipolar operation. However, Altman teaches a cardiac pacer using switched capacitor circuits for maintaining isolation between an atrial channel subsystem and a ventricular channel subsystem. That is, Altman teaches that each

channel subsystem is independently operable for bipolar sensing. This is not the claimed invention, which recites that an actuated pair defines a layer spanning from the electrical conductive surface portion of the septal branch to the electrically conductive surface portion of the lateral branch thereby dividing cardiac tissue. Claim 20 (as previously amended) recited that the anode was on one branch and the cathode is on another branch. Altman teaches away from this structure and thus cannot provide the missing features argued above.

As argued above, nowhere does McGee provide a hint that dividing of cardiac tissues may result in a better defibrillation device. It is the dividing of the cardiac tissue, which occurs as a result of the recited electrically conductive surface portions of the septal branch being unambiguously associated in pairs with an electrically conductive surface portion of the lateral branch that enables a defibrillation procedure to employ a lower current level than previously thought possible. Inasmuch as the known prior art, as well as explicit teachings from McGee, teach pulsing signals from different electrodes at different times, it is respectfully submitted that one of ordinary skill in the art would not have considered reconstructing the algorithm taught by McGee to that of the claimed invention. That is, there is no teaching, other than Applicant's own specification, that would motivate one of ordinary skill in the art to modify the algorithm taught by McGee. Further, McGee, Ljungström and Altman do not disclose, teach or suggest an electrode arrangement having two branches of electrodes where unambiguously associated pairs of the electrodes define a layer spanning from one branch to another branch thereby

dividing cardiac tissue as claimed by Applicant. Accordingly, these references cannot be combined to achieve the claimed invention.

Cookstone and Hess are each applied for their teachings of lead placement and multi-functional lead design, respectively. Nowhere does Cookstone, nor Hess address, let alone disclose, teach or suggest an electrode lead having at least two branches including a septal and a lateral branch where electrically conductive surface portions disposed on a respective branch are unambiguously associated in pairs with an electrically conductive surface portion of the other branch so that each actuated pair defines a layer spanning from the electrically conductive surface portion of the septal branch t the electrically conductive portion of the lateral branch thereby dividing cardiac tissue resulting in a better defibrillation device. Accordingly, neither Cookstone nor Hess can provide the teachings missing from the above combination as argued above and, as a result, cannot provide the motivation to modify the base reference nor can these secondary references render the claimed invention obvious.

In view of the foregoing amendments and remarks, it is respectfully submitted that claims 14-26 are patentable over the art of record because McGee, Ljungstrom, Altman, Cookstone and Hess, even when combined, fail to disclose, teach or even suggest an electrode arrangement where each electrically conductive surface portion of the septal branch is unambiguously associated in pairs with an electrically conductive surface portion of a lateral branch and where each pair is actuated in such a way that the two electrically conductive surface portions are serving as an anode and a cathode in a bipolar mode of operation and each actuated pair defines a layer spanning from the

electrically conductive surface portion of the septal branch to the electrically conductive surface portion of the lateral branch thereby dividing cardiac tissue resulting in a better defibrillation device, as set forth in independent claim 20.

In view of the above, it is respectfully submitted that none of the prior art of record addresses an electrode arrangement having a septal branch and a lateral branch where unambiguously associated pairs of electrically conductive surface portions on the respective septal and lateral branch define layers which divide cardiac tissue when the electrically conductive surface portions are activated. It is respectfully submitted that this Amendment After Final Rejection places the application in condition for allowance by clarifying the functional structure of the claimed electrode arrangement, does not raise new issues and does not raise the issue as new matter. Accordingly, Applicant respectfully requests that this Amendment After Final Rejection be entered and that this application be passed to issuance.

Should the Examiner believe that a conference would advance the prosecution of this application, she is encouraged to telephone the undersigned counsel to arrange such a conference.

Respectfully submitted,

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